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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/654,871 | 09/01/2000 | Takeshi Chujoh | 196889US2SRD | 7134 |
| 22850 | 7590 | 07/27/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | CZEKAJ, DAVID J | |
| ART UNIT | | PAPER NUMBER | | 102 |
| 2613 | | | | |

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|---------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/654,871 | CHUJOH ET AL. |
| Examiner | Art Unit | |
| Dave Czekaj | 2613 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 May 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,2,6-9,11,12,16,17 and 20 is/are rejected.
 7) Claim(s) 3-5,10,13-15,18 and 19 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 May 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-2, 6-9, 11-12, 16-17, and 20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 6-9, 11-12, 16-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo et al. (6618439), (hereinafter referred to as "Kuo"), in view of Chen et al. (6208693), (hereinafter referred to as "Chen") in further view of Bianchi (6392694).

Regarding claims 1, 6, 9, and 16, Kuo discloses an apparatus that derives motion vectors for application in the interpolation of a video signal. This apparatus comprises "determining whether a video signal in a predetermined unit area represents a background or non-background area acquired by decoding encoded data obtained by compression-encoding" (Kuo: column 9, lines 39-42, wherein the predetermined unit area is the macroblock and the segmentation circuit determines whether the area is a background or motion object area (non-background)) and "determining an area of a moving object from a result of the determination on whether the signal represents a background or non-background

area" (Kuo: column 9, lines 39-42, column 14, lines 25-27, wherein the segmentation circuit determines a motion object area (non-background) which is shown to be the white areas in figures 6A and 6B). However, this apparatus lacks removing non-background macroblocks such as noise, determining a smallest rectangle enclosing area, and detecting adjacent unit areas representing the non-background are to determine the adjacent unit areas as an area of a moving object as claimed. Chen teaches that implementing a boundary box allows just the macroblocks inside the box to be processed, instead of processing all the macroblocks in a picture (Chen: column 6, lines 65-67 – column 7, lines 1-2, wherein the boundary box is the smallest rectangle enclosing area). Bianchi teaches that improvements over prior art camera control systems are needed that are inexpensive, produce acceptable results, and impose few restrictions on the speaker (Bianchi: column 1, lines 64-67 – column 2, lines 1-7). To help improve these systems, Bianchi discloses "detecting adjacent unit areas to determine the areas as an area of a moving object (Bianchi: figures 10-12, column 6, lines 41-67, wherein the process of detecting adjacent areas to determine the area of a moving object is the process of defining a bounding box around moving objects, which can be done for multiple objects). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Kuo and add the boundary box techniques taught by Chen and Bianchi in order to obtain an

apparatus that operates more efficiently and inexpensively by processing fewer macroblocks.

Regarding claims 2 and 12, Kuo in view of Chen in view of Bianchi disclose “determining whether an interest macroblock used as the interest area is a background macroblock or non-background macroblock every frame which includes detecting adjacent blocks representing the non-background block as the area of the moving object” (Kuo: column 9, lines 39-42, wherein the segmentation circuit determines whether the area is a background or motion object (non-background), column 8, lines 60-67, wherein every frame is fed into the segmentation circuit as an input; Bianchi: figures 10-12, column 6, lines 41-67, wherein the process of detecting adjacent areas to determine the area of a moving object is the process of defining a bounding box around moving objects).

Regarding claims 7 and 17, Kuo in view of Chen in view of Bianchi disclose an apparatus that comprises “determining whether a video signal in a predetermined unit area represents a background or non-background area acquired by decoding encoded data obtained by compression-encoding” (Kuo: column 9, lines 39-42, wherein the predetermined unit area is the macroblock and the segmentation circuit determines whether the area is a background or motion object area (non-background)) and “detecting adjacent unit areas representing the non-background area to determine adjacent unit areas as an area of a moving object” (Kuo: column 9, lines 39-42, column 14, lines 25-27, wherein the segmentation circuit determines a motion object area (non-

background) which is shown to be the white areas in figures 6A and 6B; Bianchi: figures 10-12, column 6, lines 41-67, wherein the process of detecting adjacent areas to determine the area of a moving object is the process of defining a bounding box around moving objects). Although Kuo fails to show a display for displaying information indicating the area of a moving object, it is inherent that Kuo's apparatus would contain a display in order to visualize the frames of data.

Regarding claim 8, Kuo discloses "combining information indicating the area of moving object with the reconstructed video to obtain a combined video image" (Kuo: figure 6B, wherein the moving object area, background information, and video data are used to predict a frame for use in a combined video image).

Regarding claims 11 and 20, Chen discloses "determining an ambit including a plurality of unit areas determined as the non-background area and adjacent to one another" (Chen: figures 3 and 4, wherein the unit areas are the macroblocks, the non-background areas are the macroblocks located outside the bounding box, the macroblocks are shown adjacent to one another in figure 4).

Allowable Subject Matter

3. Claims 3-5, 10, 13-15, and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US-5625715 04-1997 Trew et al.

US-6301370 10-2001 Steffens et al.

US-6545706 04-2003 Edwards et al.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (703) 305-3418. The examiner can normally be reached on Monday - Friday 9 hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600